CLAIMS

1.

A process for producing an olefin polymer, characterized by carrying out solution polymerization of ethylene and one or more kinds of monomers selected from α-olefins at a temperature ranging from 120 to 300°C, in the presence of a catalyst for olefin polymerization composed of:

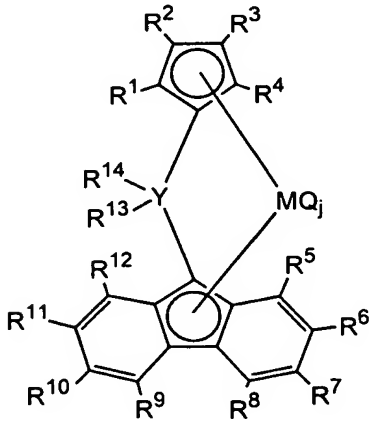
(A) a bridged metallocene compound represented by a general formula [I] described below, and

(B) at least one or more kinds of compounds selected from the group consisting of

(b-1) an organoaluminum oxy-compound,

(b-2) a compound which forms an ion pair in a reaction with the bridged metallocene compound (A), and

(b-3) an organoaluminum compound,



--------- [I]

(wherein R^1, R^2, R^3, R^4, R^5, R^8, R^9, and R^{12} are each selected from hydrogen atom, hydrocarbon group, and silicon-containing group, and may be identical or different, or neighboring groups may be combined to form a ring structure. R^6 and R^{11} are each identical atoms or identical groups selected from hydrogen, hydrocarbon group, and silicon-containing group, and may be combined to form a ring structure; R^7 and R^{10} are each identical atoms or identical groups selected from hydrogen, hydrocarbon group, and silicon-containing group, and may be combined to form a ring structure; R^6, R^7, R^{10} and R^{11} are not simultaneously hydrogen atoms. R^{13} and R^{14} are each aryl group, and may be identical or different; M represents Ti, Zr or Hf, and is preferably Zr or Hf; Y represents carbon or silicon; Q represents halogen, hydrocarbon group, anionic ligand, or a lone electron pair, and may be selected in an identical or different combination of neutral ligands capable of coordination; and j is an integer of 1 to 4.)

2.

The process for producing an olefin polymer according to claim 1, wherein R^6 and R^{11} are an identical group

selected from hydrocarbon groups and silicon-containing groups, and R^7 and R^{10} are an identical group selected from hydrocarbon groups and silicon-containing groups.